HANDHELD REMOTE COMPUTER CONTROL AND METHODS FOR SECURED INTERACTIVE REAL-TIME TELECOMMUNICATIONS

This application is a continuation-in-part application of U.S. application Ser. Nos. 08/482,261, now abandoned, 08/485,083, now abandoned, and 08/480,614, now U.S. Pat. No. 5,696,824, all three applications filed on Jun. 7, 1995 and all three applications incorporated herein by reference.

FIELD OF THE INVENTION

The invention relates to a handheld remote control wand having bar code, sound, voice and visual telecommunication systems for controlling a host computer server.

BACKGROUND OF THE INVENTION

In the emerging Internet era, communications between personal computers (PCs) is becoming routine. However, problems remain to be solved, foremost among which are ease of use and access and portability of communication equipment. While desk and laptop PCs offer telecommunications access to a variety of different server networks, commonly any exchange of information between the user and server is conducted in the public domain, i.e., on one big "party line" where ease-dropping and data manipulation can occur. While suitable for recreational use, this is not suitable for most business activities. While modem or facsimile communications between PCs may be more secure, they suffer from other disadvantages in that communication is commonly restricted to textual and/or graphic materials and do not usually allow simultaneous voice or sound content. Likewise, telephone conversations commonly involve voice without textual or graphic support. While multimedia communication systems may be available for use in a presentation conference room setting, they often involve expensive and/or bulky equipment that is not easily portable.

In everyday personal and business life there are many times when it would be desirable communicate on a real-time secure basis, and in a multimedia manner, e.g., with the main office, in a secure manner.

Advertising sales and marketing materials are commonly distributed using a print media, such as newspapers, magazines, brochures and catalogs. On the one hand, these media can have advantages of low cost, ease of distribution, and sales effectiveness. However, on the other hand, print media are relatively inflexible as a method of communication. Copy is often directed towards the "average buyer", in the full recognition that such an individual may not exist, and with limited provision for an alternative presentation other than launching several different expensive ad campaigns. Printed copy provides no opportunity for questions, or interaction between the writer and the person reading the copy. Print media is also weak at the actual point of order entry. At best, a printed advertisement can offer a mail or FAX order form; or, it can direct a potential buyer to a telephone number for placing an order. Tele-marketing is similarly non-interactive and considered by many potential buyers to be intrusive. It is, therefore, considered ineffective for most products.

Methods for order entry using a bar code reader include transmittal of data to a host processor, but are not presently believed to include methods for presentation of information to a customer at a handheld unit in a multimedia format, or in real time.

U.S. Pat. No. 4,947,028, "Automated Order and Payment System", issued Aug. 7, 1990, in the name of Jonathan M. Gorog and assigned to Arbor-International, Inc. (Gorog), shows a limited automated order and payment system. An order is entered at an "Order Computer Terminal" using a keyboard and/or a bar code reader to communicate with a central computer system where credit information is verified and instructions are sent back to the order entry terminal to print or display an order verification for the user. While this system generally achieves a purpose of order entry, it suffers from being little more than a re-packaged personal computer (PC). Attendant disadvantages of the system are numerous, foremost being expense and lack of portability. Disclosed systems in Gorog also do not include methods to allow rapid presentation of voice information to a customer interactively, or in real-time, or using a handheld portable unit to accomplish the methods disclosed. (In the latter case, the system does not have a voice/data modem, nor low power circuitry or power management, nor a communications protocol to achieve voice and data on ordinary telephone lines while managing power usage.)

U.S. Pat. No. 5,221,838, "Electronic Wallet", issued Jun. 22, 1993, in the name of Jose Gutman et al. and assigned to Motorola, Inc., discloses an "electronic wallet" for storing a bank balance and for receiving a radio message to update the balance. The system apparently updates the balance in memory in response to data entered by the user. Included are a user terminal with keyboard, magnetic card reader, bar code reader, display screen and printer. However, the system is really little more than a re-packaged PC, drawing power from a 110 V wall outlet (or from large bulky batteries), without ease of portability, and without capability for multimedia real-time interactive bi-directional communication with an automated order center computer. In short, the attendant disclosure does not seem to disclose interactive multimedia real-time presentation of information to a user.

U.S. Pat. No. 5,365,577, "Telecommunication Display System", issued Nov. 15, 1994, in the name of Richard A. Davis et al. and assigned to Radish Communications Systems, Inc., shows a telecommunication system that can reportedly be dynamically switched between voice mode and data mode in the course of a single telephone call. But this system suffers from the disadvantage that it requires "smart" PCs, and involves in methods for "peer-to-peer" communications generally involving an interrupted voice conversation between two parties. The system seems to involve directional couplers that also add expense. The two peer PCs each require power from a 110 V wall outlet, (or large bulky batteries); and, are not easily handheld.

U.S. Pat. No. 5,465,291, "Apparatus for Ordering From Remote Locations", issued Nov. 7, 1995 in the name of Barrus et al. (Barrus) discloses a method for transmitting user information to a remote computer in a dual-tone multiple frequency (DTMF) "touch tone" format that suffers not including a way to accomplish bi-directional communication such as needed for transmitting data for display by a user. Also missing, are ways to check for errors in transmission, or to encrypt user sensitive data, or ways to receive confidential data from a host computer for display in a protected manner, or ways to protect confidential information. In addition, DTMF systems suffer from at least the general disadvantages of failing to encode self-correcting error-free telecommunication signals; and, being a relatively slow method for transmission of data. Approximately 0.1 seconds being required for each different integer and 0.2 seconds for each alpha character encoded by a DTMF tonal pair using 50 milliseconds "on" followed by 50 milliseconds "off" for each character digit. This is excessively slow for transmission of bar code data. For example, a 16 digit code